

## PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2003-087544  
(43)Date of publication of application : 20.03.2003

(4)

(51)Int.Cl.

H04N 1/387  
G06T 1/00  
G06T 3/00  
H04N 1/00

(21)Application number : 2001-272376

(22)Date of filing : 07.09.2001

(71)Applicant : MATSUSHITA ELECTRIC IND CO LTD

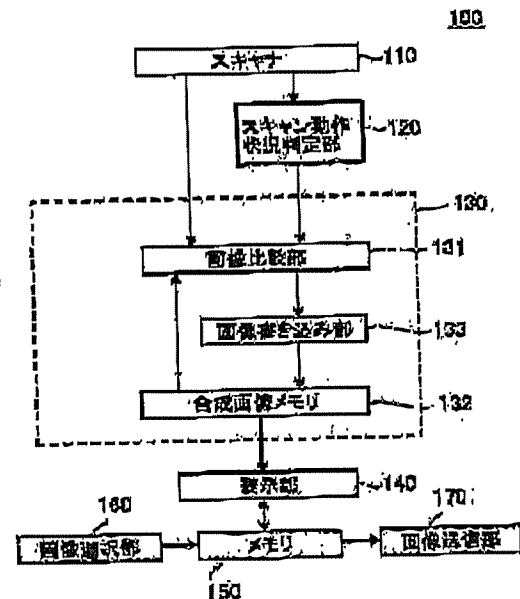
(72)Inventor : IIDA RYOSUKE  
NISHIZAWA MASATO  
UEKI CHIHIRO  
TSURIBE SATOYUKI  
MATSUYAMA YOSHIYUKI  
IDE CHIKEI  
SHIINA SACHIKO

### (54) MOBILE COMMUNICATION TERMINAL WITH SCANNER, IMAGE COMPOSITING METHOD AND IMAGE COMPOSITING PROGRAM

(57)Abstract:

**PROBLEM TO BE SOLVED:** To provide a mobile communication terminal with a scanner that can be used as a simple memo pad by facilitating image acquisition, display and transmission.

**SOLUTION:** This mobile communication terminal with a scanner is provided with an image compositing means 130 for sequentially combining individual partial images read by a scanner 110 to reproduce one image of a reading target, a memory 150 for storing a composite image being a reproduced image of the reading target, a display means 140 for displaying the composite image, and an image transmitting means 170 capable of transmitting the composite image in the memory 150 or the display means 140 to an external device. The image compositing means 130 is provided with a composite image memory 132 for storing images obtained sequentially by combining images, an image comparison means 131 for comparing the image stored last into the composite image memory 132 with a partial image of the current frame to prepare position information for combining images, and an image writing means 133 for preparing a composite image of the current frame into the composite image memory 132 on the basis of the positional image.



# PATENT ABSTRACTS OF JAPAN

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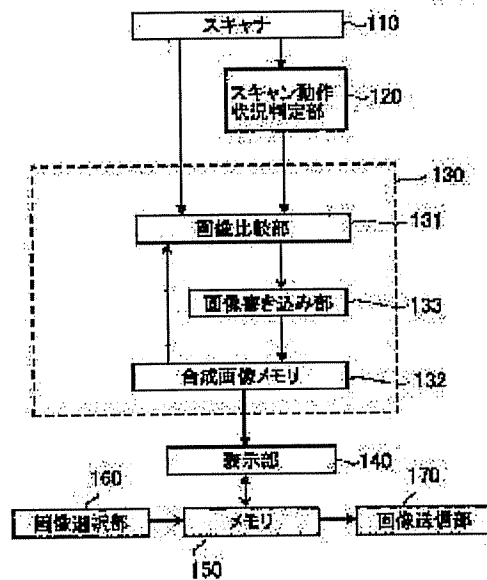
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100 (57)Abstract:



PROBLEM TO BE SOLVED: To provide a mobile communication terminal with a scanner that can be used as a simple memo pad by facilitating image acquisition, display and transmission.

SOLUTION: This mobile communication terminal with a scanner is provided with an image compositing means 130 for sequentially combining individual partial images read by a scanner 110 to

reproduce one image of a reading target, a memory 150 for storing a composite image being a reproduced image of the reading target, a display means 140 for displaying the composite image, and an image transmitting means 170 capable of transmitting the composite image in the memory 150 or the display means 140 to an external device. The image compositing means 130 is provided with a composite image memory 132 for storing images obtained sequentially by combining images, an image comparison means 131 for comparing the image stored last into the composite image memory 132 with a partial image of

the current frame to prepare position information for combining images, and an image writing means 133 for preparing a composite image of the current frame into the composite image memory 132 on the basis of the positional image.

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## CLAIMS

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[Claim(s)]

[Claim 1] The scanner which can be read as a partial image with which the image for [ one ] reading was scanned and plurality continued, An image composition means to carry out image composition of each partial image read with said scanner one by one, and to reproduce the image for [ said / one ] reading, The memory which memorizes the synthetic image which is an image for [ which was reproduced by said image composition means ] reading, The mobile telecom terminal with a scanner characterized by having a display means to display said synthetic image, and an image transmitting means by which the synthetic image displayed on the synthetic image memorized by said memory or said display means can be transmitted to external equipment.

[Claim 2] The synthetic image memory for updating and memorizing the image which said image composition means carries out image composition, and is obtained one by one, An image comparison means to generate the positional information for comparing the image which updated at the end to said synthetic image memory, and was memorized in it with said newly read partial image, and carrying out image composition, The mobile telecom terminal with a scanner according to claim 1 characterized by having an image write-in means for carrying out image composition of the image which updated at the end to said synthetic image memory, and was memorized in it, and said newly read partial image based on said positional information, and

writing in said synthetic image memory.

[Claim 3] The synthetic image memory for updating and memorizing the image which said image composition means carries out image composition, and is obtained one by one, The front frame image memory for memorizing the partial image of a just before [ the partial image newly read with said scanner ] frame, An image comparison means to compare the partial image memorized by said front frame image memory with said newly read partial image, and to generate the positional information for [ said ] carrying out image composition, The mobile telecom terminal with a scanner according to claim 1 characterized by having an image write-in means for carrying out image composition of the image which updated at the end to said synthetic image memory, and was memorized in it, and said newly read partial image based on said positional information, and writing in said synthetic image memory.

[Claim 4] Said image composition means is a mobile telecom terminal with a scanner according to claim 1 to 3 characterized by having a picture compression means for compressing further the partial image read with said scanner, and carrying out image composition.

[Claim 5] Said mobile telecom terminal with a scanner is a mobile telecom terminal with a scanner according to claim 1 to 4 characterized by having the compounded image preservation memory which can memorize further two or more synthetic images compounded by said image composition means, and the compounded image composition means which carries out image composition of two or more synthetic images memorized by said compounded image preservation memory.

[Claim 6] The step read as a partial image with which the image for [ one ] reading was scanned and plurality continued, The image composition step which carries out image composition of said each read partial image one by one, and reproduces the image for [ said / one ] reading, The memory step

which memorizes the synthetic image which is an image for [ which was reproduced at said image composition step ] reading, The image composition approach characterized by having the display step which displays said synthetic image, and the image transmitting step which transmits the synthetic image displayed at the synthetic image memorized at said memory step, or said display step to external equipment.

[Claim 7] The synthetic image memory step for updating and memorizing the image which said image composition step carries out image composition, and is obtained one by one, The image comparison step which generates the positional information for comparing the image which updated at the end and was memorized at said synthetic image memory step with said newly read partial image, and carrying out image composition, The image composition approach according to claim 6 characterized by consisting of an image write-in step for carrying out image composition of the image which updated at the end and was memorized at said synthetic image memory step, and said newly read partial image based on said positional information.

[Claim 8] The synthetic image memory step for updating and memorizing the image which said image composition step carries out image composition, and is obtained one by one, The front frame image memory step for memorizing the partial image of a just before [ the partial image newly read with said scanner ] frame, The image comparison step which compares the partial image memorized at said front frame image memory step with said newly read partial image, and generates the positional information for [ said ] carrying out image composition, The image composition approach according to claim 6 characterized by consisting of an image write-in step for carrying out image composition of the image which updated at the end and was memorized at said synthetic image memory step, and said newly read partial image based on said positional information.

[Claim 9] Said image composition step is the image composition approach

according to claim 6 to 8 characterized by having a picture compression step for compressing further the partial image read with said scan, and carrying out image composition.

[Claim 10] Said image composition approach is the image composition approach according to claim 6 to 9 characterized by having the compounded image composition step which carries out two or more images composition of the synthetic image compounded by said image composition step further.

[Claim 11] The step read as a partial image with which the image for [ one ] reading was scanned to the computer, and plurality followed it, The image composition step which carries out image composition of said each read partial image one by one, and reproduces the image for [ said / one ] reading, The memory step which memorizes the synthetic image which is an image for [ which was reproduced at said image composition step ] reading, The program for performing the display step which displays said synthetic image, and the image transmitting step which transmits the synthetic image displayed at the synthetic image memorized at said memory step, or said display step to external equipment.

[Claim 12] The synthetic image memory step for updating and memorizing the image which said image composition step carries out image composition, and is obtained one by one, The image comparison step which generates the positional information for comparing the image which updated at the end and was memorized at said synthetic image memory step with said newly read partial image, and carrying out image composition, The program according to claim 11 characterized by consisting of an image write-in step for carrying out image composition of the image which updated at the end and was memorized at said synthetic image memory step, and said newly read partial image based on said positional information.

[Claim 13] The synthetic image memory step for updating and memorizing the image which said image composition step carries out image composition, and

is obtained one by one, The front frame image memory step for memorizing the partial image of a just before [ the partial image newly read with said scanner ] frame, The image comparison step which compares the partial image memorized at said front frame image memory step with said newly read partial image, and generates the positional information for [ said ] carrying out image composition, The image composition approach according to claim 11 characterized by consisting of an image write-in step for carrying out image composition of the image which updated at the end and was memorized at said synthetic image memory step, and said newly read partial image based on said positional information.

[Claim 14] Said image composition step is a program according to claim 11 to 13 characterized by having a picture compression step for compressing further the partial image read with said scan, and carrying out image composition.

[Claim 15] Said program is a program according to claim 11 to 14 characterized by making a computer perform the compounded image composition step which carries out two or more images composition of the synthetic image further compounded by said image composition step.

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## DETAILED DESCRIPTION

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### [Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to a mobile telecom terminal with a scanner, the image composition approach, and an image composition program.

[0002]

[Description of the Prior Art] In recent years, the diffusion rate of a mobile telecom terminal increases rapidly, and various new functions are joining the mobile telecom terminal itself with development of a



technique. On the other hand, actuation of a mobile telecom terminal became more complicated than before, and suited the inclination for a user's burden to increase. In order to mitigate the burden of the user who increases in this way conventionally, the portable telephone currently indicated by JP,10-126480,A is proposed.

[0003] Drawing 13 is drawing showing an example of the portable telephone currently indicated by JP,10-126480,A. The bar code scanner 1302 is attached in the portable telephone 1301 in drawing 13 . By scanning and reading a bar code with a bar code scanner 1302, the user of a portable telephone 1301 can acquire the information registered into a setup and telephone directory of the various functions of a portable telephone 1301, and does not need to perform other complicated key strokes.

[0004] Moreover, in invention currently indicated by JP,2000-358105,A, the portable telephone which can perform information retrieval is proposed by using a bar code, without carrying out a troublesome key stroke. A bar code is read and, specifically, required information is retrieved through circuits, such as the Internet, based on the information indicated by the bar code.

[0005]

[Problem(s) to be Solved by the Invention] However, in the conventional mobile telecom terminal with a scanner, there was a problem that it was difficult to be able to read not any alphabetic characters other than a bar code to a mobile telecom terminal using a scanner, and for things other than an alphabetic character to also read drawing as a bar code, for example.

[0006] It is possible to transmit to compress and to display to save the image which it was made in order that this invention might solve such a problem, and was acquired with the scanner as it is or to save, the saved

image, or the acquired image and the image which were saved, or the acquired image, and it is offering the mobile telecom terminal with a scanner, the image composition approach, and the image composition program which can use instead of an easy memo pad.

[0007]

[Means for Solving the Problem] The scanner which can be read as a partial image with which the mobile telecom terminal with a scanner of this invention scanned the image for [ one ] reading, and plurality continued, An image composition means to carry out image composition of each partial image read with said scanner one by one, and to reproduce the image for [ said / one ] reading, The memory which memorizes the synthetic image which is an image for [ which was reproduced by said image composition means ] reading, It has the configuration equipped with a display means to display said synthetic image, and an image transmitting means by which the synthetic image displayed on the synthetic image memorized by said memory or said display means can be transmitted to external equipment. Even if it is the information which is hard to tell in an alphabetic character or language by transmitting to a partner's equipment by using the contents of printing as an image by this configuration while the information on a printing lifter is simply acquirable and being able to attain paperless-ization, since the image read with the scanner is memorized and it can transmit, the mobile telecom terminal with a scanner which can tell a partner those contents easily is realizable.

[0008] Moreover, the mobile telecom terminal with a scanner of this invention The scanner which can be read as a partial image with which the image for [ one ] reading was scanned and plurality continued, An image composition means to carry out image composition of each partial image read with said scanner one by one, and to reproduce the image for

[ said / one ] reading, The memory which memorizes the synthetic image which is an image for [ which was reproduced by said image composition means ] reading, It has a display means to display said synthetic image, and an image transmitting means by which the synthetic image displayed on the synthetic image memorized by said memory or said display means can be transmitted to external equipment. The synthetic image memory for updating and memorizing the image which said image composition means carries out image composition, and is obtained one by one, An image comparison means to generate the positional information for comparing the image which updated at the end to said synthetic image memory, and was memorized in it with said newly read partial image, and carrying out image composition, It has the configuration equipped with the image write-in means for carrying out image composition of the image which updated at the end to said synthetic image memory, and was memorized in it, and said newly read partial image based on said positional information, and writing in said synthetic image memory. Even if it is the information which is hard to tell in an alphabetic character or language by transmitting to a partner's equipment by using the contents of printing as an image by this configuration while the information on a printing lifter is simply acquirable and being able to attain paperless-ization, since the image read with the scanner is memorized and it can transmit, the mobile telecom terminal with a scanner which can tell a partner those contents easily is realizable.

[0009] Moreover, the mobile telecom terminal with a scanner of this invention The scanner which can be read as a partial image with which the image for [ one ] reading was scanned and plurality continued, An image composition means to carry out image composition of each partial image read with said scanner one by one, and to reproduce the image for [ said / one ] reading, The memory which memorizes the synthetic image

which is an image for [ which was reproduced by said image composition means ] reading, It has a display means to display said synthetic image, and an image transmitting means by which the synthetic image displayed on the synthetic image memorized by said memory or said display means can be transmitted to external equipment. The synthetic image memory for updating and memorizing the image which said image composition means carries out image composition, and is obtained one by one, The front frame image memory for memorizing the partial image of a just before [ the partial image newly read with said scanner ] frame, An image comparison means to compare the partial image memorized by said front frame image memory with said newly read partial image, and to generate the positional information for [ said ] carrying out image composition, It has the configuration which has an image write-in means for carrying out image composition of the image which updated at the end to said synthetic image memory, and was memorized in it, and said newly read partial image based on said positional information, and writing in said synthetic image memory. Even if it is the information which is hard to tell in an alphabetic character or language by transmitting to a partner's equipment by using the contents of printing as an image by this configuration while the information on a printing lifter is simply acquirable and being able to attain paperless-ization, since the image read with the scanner is memorized and it can transmit, the mobile telecom terminal with a scanner which can tell a partner those contents easily is realizable.

[0010] Moreover, the mobile telecom terminal with a scanner of this invention The scanner which can be read as a partial image with which the image for [ one ] reading was scanned and plurality continued, An image composition means to carry out image composition of each partial image read with said scanner one by one, and to reproduce the image for

[ said / one ] reading, The memory which memorizes the synthetic image which is an image for [ which was reproduced by said image composition means ] reading, It has a display means to display said synthetic image, and an image transmitting means by which the synthetic image displayed on the synthetic image memorized by said memory or said display means can be transmitted to external equipment. Said image composition means has the configuration equipped with the picture compression means for compressing further the partial image read with said scanner, and carrying out image composition. While a user can capture an image, without being conscious of the magnitude of the object scanned in case an image is captured since the means for compressing, compounding and saving an image by this configuration was established, and being able to save the memory for image preservation, the mobile telecom terminal with a scanner which can be efficiently displayed on the display of the magnitude restricted also when a user looked at an image is realizable.

[0011] Moreover, the mobile telecom terminal with a scanner of this invention The scanner which can be read as a partial image with which the image for [ one ] reading was scanned and plurality continued, An image composition means to carry out image composition of each partial image read with said scanner one by one, and to reproduce the image for [ said / one ] reading, The memory which memorizes the synthetic image which is an image for [ which was reproduced by said image composition means ] reading, A display means to display said synthetic image, and an image transmitting means by which the synthetic image displayed on the synthetic image memorized by said memory or said display means can be transmitted to external equipment, It has the configuration equipped with the compounded image preservation memory which can memorize two or more synthetic images compounded by said image

composition means, and the compounded image composition means which carries out image composition of two or more synthetic images memorized by said compounded image preservation memory. While being able to compound and read an image with wide width of face by this configuration even if it is the case where a small sensor is used since the means for compounding a compounded image again was established, even if by transmitting such an image to others' equipment is hard to explain in an alphabetic character or language, the mobile telecom terminal with a scanner which can be easily told against those contents is realizable.

[0012] Moreover, the step read as a partial image with which the image composition approach of this invention scanned the image for [ one ] reading, and plurality continued, The image composition step which carries out image composition of said each read partial image one by one, and reproduces the image for [ said / one ] reading, The memory step which memorizes the synthetic image which is an image for [ which was reproduced at said image composition step ] reading, It has the configuration equipped with the display step which displays said synthetic image, and the image transmitting step which transmits the synthetic image displayed at the synthetic image memorized at said memory step, or said display step to external equipment. Since the image read with the scanner is memorized and it can transmit by this configuration, By being able to attain paperless-ization, while the information on a printing lifter is simply acquirable, and transmitting to a partner's equipment by using the contents of printing as an image In an alphabetic character or language, even if it is the information which is hard to tell, the contents can be easily told to a partner, and even if it is the case where a still smaller scanner is used, the image composition approach which can acquire a wide range image is realizable.

[0013] Moreover, the step read as a partial image with which the image composition approach of this invention scanned the image for [ one ] reading, and plurality continued, The image composition step which carries out image composition of said each read partial image one by one, and reproduces the image for [ said / one ] reading, The memory step which memorizes the synthetic image which is an image for [ which was reproduced at said image composition step ] reading, It has the display step which displays said synthetic image, and the image transmitting step which transmits the synthetic image displayed at the synthetic image memorized at said memory step, or said display step to external equipment. The synthetic image memory step for updating and memorizing the image which said image composition step carries out image composition, and is obtained one by one, The image comparison step which generates the positional information for comparing the image which updated at the end and was memorized at said synthetic image memory step with said newly read partial image, and carrying out image composition, It has the configuration which consists of an image write-in step for carrying out image composition of the image which updated at the end and was memorized at said synthetic image memory step, and said newly read partial image based on said positional information. Since the image read with the scanner is memorized and it can transmit by this configuration, By being able to attain paperless-ization, while the information on a printing lifter is simply acquirable, and transmitting to a partner's equipment by using the contents of printing as an image In an alphabetic character or language, even if it is the information which is hard to tell, the contents can be easily told to a partner, and even if it is the case where a still smaller scanner is used, the image composition approach which can acquire a wide range image is realizable.

[0014] Moreover, the step read as a partial image with which the image

composition approach of this invention scanned the image for [ one ] reading, and plurality continued, The image composition step which carries out image composition of said each read partial image one by one, and reproduces the image for [ said / one ] reading, The memory step which memorizes the synthetic image which is an image for [ which was reproduced at said image composition step ] reading, It has the display step which displays said synthetic image, and the image transmitting step which transmits the synthetic image displayed at the synthetic image memorized at said memory step, or said display step to external equipment. The synthetic image memory step for updating and memorizing the image which said image composition step carries out image composition, and is obtained one by one, The front frame image memory step for memorizing the partial image of a just before [ the partial image newly read with said scanner ] frame, The image comparison step which compares the partial image memorized at said front frame image memory step with said newly read partial image, and generates the positional information for [ said ] carrying out image composition, It has the configuration which consists of an image write-in step for carrying out image composition of the image which updated at the end and was memorized at said synthetic image memory step, and said newly read partial image based on said positional information. Since the image read with the scanner is memorized and it can transmit by this configuration, By being able to attain paperless-ization, while the information on a printing lifter is simply acquirable, and transmitting to a partner's equipment by using the contents of printing as an image In an alphabetic character or language, even if it is the information which is hard to tell, the contents can be easily told to a partner, and even if it is the case where a still smaller scanner is used, the image composition approach which can acquire a wide range image is realizable.



[0015] Moreover, the step read as a partial image with which the image composition approach of this invention scanned the image for [ one ] reading, and plurality continued, The image composition step which carries out image composition of said each read partial image one by one, and reproduces the image for [ said / one ] reading, The memory step which memorizes the synthetic image which is an image for [ which was reproduced at said image composition step ] reading, It has the display step which displays said synthetic image, and the image transmitting step which transmits the synthetic image displayed at the synthetic image memorized at said memory step, or said display step to external equipment. Said image composition step has the configuration equipped with the picture compression step for compressing further the partial image read with said scan, and carrying out image composition. Since the processing for compressing and compounding an image by this configuration was prepared, a user can realize the image composition approach which can capture an image, without being conscious of the magnitude of the object scanned in case an image is captured.

[0016] Moreover, the step read as a partial image with which the image composition approach of this invention scanned the image for [ one ] reading, and plurality continued, The image composition step which carries out image composition of said each read partial image one by one, and reproduces the image for [ said / one ] reading, The memory step which memorizes the synthetic image which is an image for [ which was reproduced at said image composition step ] reading, The display step which displays said synthetic image, and the image transmitting step which transmits the synthetic image displayed at the synthetic image memorized at said memory step, or said display step to external equipment, It has the configuration equipped with the compounded image composition step which carries out two or more images

composition of the synthetic image compounded by said image composition step. While being able to compound and read an image with wide width of face by this configuration even if it is the case where a small sensor is used since the processing for compounding a compounded image again was prepared, even if by transmitting such an image to others' equipment is hard to explain in an alphabetic character or language, the image composition approach which can be easily told against those contents is realizable.

[0017] Moreover, the step read as a partial image with which the program of this invention scanned the image for [ one ] reading to the computer, and plurality continued, The image composition step which carries out image composition of said each read partial image one by one, and reproduces the image for [ said / one ] reading, The memory step which memorizes the synthetic image which is an image for [ which was reproduced at said image composition step ] reading, It has the configuration which performs the display step which displays said synthetic image, and the image transmitting step which transmits the synthetic image displayed at the synthetic image memorized at said memory step, or said display step to external equipment. Since the image read with the scanner is memorized and it can transmit by this configuration, By being able to attain paperless-ization, while the information on a printing lifter is simply acquirable, and transmitting to a partner's equipment by using the contents of printing as an image In an alphabetic character or language, even if it is the information which is hard to tell, the contents can be easily told to a partner, and even if it is the case where a still smaller scanner is used, the program which can acquire a wide range image is realizable.

[0018] Moreover, the step read as a partial image with which the program of this invention scanned the image for [ one ] reading to the

computer, and plurality continued, The image composition step which carries out image composition of said each read partial image one by one, and reproduces the image for [ said / one ] reading, The memory step which memorizes the synthetic image which is an image for [ which was reproduced at said image composition step ] reading, The display step which displays said synthetic image, and the image transmitting step which transmits the synthetic image displayed at the synthetic image memorized at said memory step or said display step to external equipment are performed. The synthetic image memory step for updating and memorizing the image which said image composition step carries out image composition, and is obtained one by one, The image comparison step which generates the positional information for comparing the image which updated at the end and was memorized at said synthetic image memory step with said newly read partial image, and carrying out image composition, It has the configuration which consists of an image write-in step for carrying out image composition of the image which updated at the end and was memorized at said synthetic image memory step, and said newly read partial image based on said positional information. Since the image read with the scanner is memorized and it can transmit by this configuration, By being able to attain paperless-ization, while the information on a printing lifter is simply acquirable, and transmitting to a partner's equipment by using the contents of printing as an image In an alphabetic character or language, even if it is the information which is hard to tell, the contents can be easily told to a partner, and even if it is the case where a still smaller scanner is used, the program which can acquire a wide range image is realizable.

[0019] Moreover, the step read as a partial image with which the program of this invention scanned the image for [ one ] reading to the

computer, and plurality continued, The image composition step which carries out image composition of said each read partial image one by one, and reproduces the image for [ said / one ] reading, The memory step which memorizes the synthetic image which is an image for [ which was reproduced at said image composition step ] reading, The display step which displays said synthetic image, and the image transmitting step which transmits the synthetic image displayed at the synthetic image memorized at said memory step or said display step to external equipment are performed. The synthetic image memory step for updating and memorizing the image which said image composition step carries out image composition, and is obtained one by one, The front frame image memory step for memorizing the partial image of a just before [ the partial image newly read with said scanner ] frame, The image comparison step which compares the partial image memorized at said front frame image memory step with said newly read partial image, and generates the positional information for [ said ] carrying out image composition, It has the configuration which consists of an image write-in step for carrying out image composition of the image which updated at the end and was memorized at said synthetic image memory step, and said newly read partial image based on said positional information. Since the image read with the scanner is memorized and it can transmit by this configuration, By being able to attain paperless-ization, while the information on a printing lifter is simply acquirable, and transmitting to a partner's equipment by using the contents of printing as an image In an alphabetic character or language, even if it is the information which is hard to tell, the contents can be easily told to a partner, and even if it is the case where a still smaller scanner is used, the program which can acquire a wide range image is realizable.

[0020] Moreover, the step read as a partial image with which the

program of this invention scanned the image for [ one ] reading to the computer, and plurality continued, The image composition step which carries out image composition of said each read partial image one by one, and reproduces the image for [ said / one ] reading, The memory step which memorizes the synthetic image which is an image for [ which was reproduced at said image composition step ] reading, The display step which displays said synthetic image, and the image transmitting step which transmits the synthetic image displayed at the synthetic image memorized at said memory step or said display step to external equipment are performed. Said image composition step has the configuration equipped with the picture compression step for compressing further the partial image read with said scan, and carrying out image composition. Since the processing for compressing and compounding an image by this configuration was prepared, a user can realize the program which can capture an image, without being conscious of the magnitude of the object scanned in case an image is captured.

[0021] Moreover, the step read as a partial image with which the program of this invention scanned the image for [ one ] reading to the computer, and plurality continued, The image composition step which carries out image composition of said each read partial image one by one, and reproduces the image for [ said / one ] reading, The memory step which memorizes the synthetic image which is an image for [ which was reproduced at said image composition step ] reading, The display step which displays said synthetic image, and the image transmitting step which transmits the synthetic image displayed at the synthetic image memorized at said memory step, or said display step to external equipment, It has the configuration which performs the compounded image composition step which carries out two or more images

composition of the synthetic image compounded by said image composition step. While being able to compound and read an image with wide width of face by this configuration even if it is the case where a small sensor is used since the processing for compounding a compounded image again was prepared, even if by transmitting such an image to others' equipment is hard to explain in an alphabetic character or language, the program which can be easily told against those contents is realizable.

[0022]

[Embodiment of the Invention] Hereafter, the gestalt of operation of this invention is explained using a drawing. Drawing 1 is the block diagram showing the configuration of a mobile telecom terminal with a scanner of the gestalt of operation of the 1st of this invention. The mobile telecom terminal 100 with a scanner is constituted by a scanner 110, the scanning actuation situation judging section 120, the image composition section 130, a display 140, memory 150, the image selection section 160, and the image transmitting section 170. Here, the image composition section 130 is further constituted by the image comparator 131, the synthetic image memory 132, and the image write-in section 133.

[0023] A scanner 110 reads an image and outputs the read image to the scanning actuation situation judging section 120 and the image comparator 131. Since it enables it to carry in small mobile telecom terminals, such as a portable telephone, the scanner 110 of the gestalt of operation of the 1st here of this invention serves as a small area sensor which reads a long and slender field. Therefore, the image read at once with a scanner 110 is an image of a long and slender strip-of-paper-like configuration.

[0024] The scanning actuation situation judging section 120 judges whether the image read with the scanner 110 is an effective image, and

sends a judgment result to the image composition section 130. Here, it points out whether it is the image with which the user scanned the scanner 110 and was appropriately obtained [ whether it is an effective image and / scanner ] in the top for [, such as space, ] reading. The scanning actuation situation judging section 120 judges initiation and termination of a scan.

[0025] The image comparator 131 compares two images with the synthetic image memorized in the image outputted from the scanner 110, and the synthetic image memory 132 mentioned later, and computes the image composition location where the lap of these two images becomes the largest. In addition, what is performed using the well-known pattern-matching technique of performing pattern matching between images is sufficient as calculation processing of this image composition location. Here, when the synthetic image is not memorized in the synthetic image memory 132, the image comparator 131 is outputted to the image write-in section 133, without performing the above-mentioned comparison for the image read with the scanner 110.

[0026] Based on the positional information for the image composition outputted from the image comparator 131, the image write-in section 133 carries out image composition, and writes in the image read with the scanner 110, and the image with which that time is memorized in the synthetic image memory 132. In addition, when the image is not memorized in the synthetic image memory 132, the image write-in section 133 is written in the synthetic image memory 132, without performing the above-mentioned image composition for the image read with the scanner 110.

[0027] A display 140 displays the image memorized in the synthetic image memory 132, when the image composition in the image composition section 130 is completed. Moreover, a display 140 can also

display the image saved in the memory 150 mentioned later. Memory 150 can memorize two or more synthetic images captured as mentioned above.

[0028] The image selection section 160 is the configuration section for choosing a user choosing the synthetic image saved in memory 150, and transmitting the synthetic selected image to displaying on a display 140, or external equipment. The image transmitting section 170 is a means for transmitting the synthetic image which was memorized by memory 150 and chosen through the image selection section 160 to the equipment of the exteriors, such as others' mobile telecom terminal and a personal computer.

[0029] Drawing 2 (a) is the perspective view showing an example of a mobile telecom terminal with a scanner of the gestalt of operation of the 1st of this invention. As shown in drawing 2 , it is also possible to carry a scanner 202 in the surface lower part of a mobile telecom terminal 201. Moreover, scanners may be a mobile telecom terminal and one apparatus, or may be removable.

[0030] Signs that use a mobile telecom terminal 201 for drawing 2 (b), and the image on space 203 is scanned are shown. It is possible to capture the image of space 203 with moving and scanning so that a scanner 202 may stick to space 203. Drawing 2 (c) is drawing showing an example of the display in the case of displaying the information about the acquired image on the display 204 of a mobile telecom terminal 201. Thus, by displaying the time of day which acquired the image, it enables a user to choose an image to see easily.

[0031] As explained above, the mobile telecom terminal with a scanner of the gestalt of operation of the 1st of this invention memorizes the image read with the scanner, and since it can transmit, it can attain paperless-ization while it can acquire the information on a printing lifter



simply. Moreover, even if it is the information which is hard to tell in an alphabetic character or language by transmitting to a partner's equipment by using the contents of printing as an image, the contents can be easily told to a partner.

[0032] Drawing 3 is the block diagram showing the configuration of a mobile telecom terminal of the gestalt of operation of the 2nd of this invention. In drawing 3 , the number same about what carries out the same actuation as the configuration section in the mobile telecom terminal 100 with a scanner of the gestalt of operation of the 1st of this invention is attached, and the explanation is omitted. The image composition section 330 is constituted by the image comparator 331, the synthetic image memory 332, the image write-in section 133, and the front frame image memory 334 in drawing 3 .

[0033] In drawing 3 , the image comparator 331 compares two images with the image of the front frame memorized by the image outputted from the scanner 110, and the front frame image memory 334 mentioned later, and computes the image composition location where the lap of these two images becomes the largest. In that case, these two images are piled up little by little from the direction with which they should lap, and the location where the lap of a lap part serves as max can be computed as an image composition location.

[0034] In addition, what is performed using the well-known pattern-matching technique of performing pattern matching between these 2 images is sufficient as calculation processing of this image composition location. Here, when the image of a front frame is not memorized by the front frame image memory 334, the image comparator 331 outputs the image read with the scanner 110 to the image write-in section 133, without performing the above-mentioned comparison, and writes it in the front frame image memory 334.

[0035] The image write-in section 133 carries out image composition of the image read with the scanner 110, and the image memorized till then in the synthetic image memory 332 based on the positional information for the image composition outputted from the image comparator 331, and writes it in the synthetic image memory 332. In addition, when the image is not memorized in the synthetic image memory 332, the image write-in section 133 writes the image read with the scanner 110 in the synthetic image memory 332, without performing the above-mentioned image composition.

[0036] As explained above, the mobile telecom terminal with a scanner of the gestalt of operation of the 2nd of this invention memorizes the image read with the scanner, and since it can transmit, it can attain paperless-ization while it can acquire the information on a printing lifter simply. Moreover, even if it is the information which is hard to tell in an alphabetic character or language by transmitting to a partner's equipment by using the contents of printing as an image, the contents can be easily told to a partner.

[0037] Drawing 4 is a flow chart which shows the flow of the processing in the image composition approach of the gestalt operation of the 3rd of this invention. In addition, the configuration of the equipment with which the image composition approach of the gestalt operation of the 3rd of this invention is performed is the same as the configuration of the 1st of the mobile telecom terminal 100 with a scanner of the gestalt of operation of this invention shown in drawing 1 , and the explanation is omitted.

[0038] At step S410, a scanner 110 reads the partial image for [, such as paper, ] reading. It judges whether at step S420, a user sticks a scanner 110 to a reading object, and the scanning actuation situation judging section 120 is performing scan operation. This judgment may be

performed by whether it is over the threshold with the number of the edges which may carry out by whether it is over the threshold with the average luminance of the whole image, and exist in the whole image.

[0039] When judged with scan operation not being started at step S420, processing repeats step S410 until return and scan operation are started by step S410. When judged with scan operation having been started at step S420, the image write-in section 133 writes the partial image read at step S410 in the synthetic image memory 132 at step S430.

[0040] At step S440, the image composition section 130 performs image composition processing. Drawing 5 is used for below and image composition processing is explained to it. At step S441, a scanner 110 reads a partial image continuously, as shown in drawing 6 (a). Drawing 6 (a) is drawing in which the mobile telecom terminal 100 with a scanner while scanning "Hello" and the printed alphabetic character 601 shows signs that the partial image of the part of "o" is read. [0041] At step S442, it judges whether scan operation ended the scanning actuation situation judging section 120, when judged with scan operation having been completed, processing progresses to step S450, and when judged with scan operation not being completed, it moves from processing to step S443. [0042] When judged with scan operation not being completed at step S442, at step S443, the image comparator 131 compares the image memorized in the synthetic image memory 132 with the image which the scanner 110 continued and was read, performs pattern matching, and computes the location which matches most as an image composition location. The synthetic image 602 which is memorized by drawing 6 (b) in the synthetic image memory 132 and which compounded the partial image acquired till then, and the partial image 603 which the scanner 110 continued and was read at step S441 are shown. [0043] If an image composition location is computed at step S443, at step S444, based on

an above image composition location, a scanner 110 will compound the image continued and read with the image memorized in the synthetic image memory 132, and will write the image write-in section 133 in the synthetic image memory 132. After the image write-in section 133 writes the partial image 603 in drawing 6 (b), the synthetic image 604 memorized in the synthetic image memory 132 is shown.

[0044] After the writing of the partial image in step S444 finishes, processing returns to step S441. It is repeated until it is judged with scan operation having ended the processing from the above-mentioned step S441 to step S444 at step S442. If judged with scan operation having been completed at step S442, a display 140 will express a synthetic image as step S450.

[0045] A user looks at the image displayed on the display 140 directly, and if the image is obtained appropriately, he can save this in memory 150. It is also possible in that case the information about the time of day which acquired the image, and to save in memory 150 at coincidence. A user can choose an image to see out of two or more images memorized by memory 150 to see this image later. By this, the mobile telecom terminal 100 with a scanner can be used as substitution of a memo pad.

[0046] Selection of an image is possible also for carrying out displaying on a display 140 in order the image memorized by memory 150, and looking at it, and can also be carried out based on the information on the time of day which was made to display the time of day which acquired the image, and was displayed. In addition, although not shown in drawing 4 , it is also possible to transmit the image memorized by memory 150 to the equipment of the exteriors, such as others' mobile telecom terminal and a personal computer.

[0047] In addition, although the gestalt of operation of the 3rd of this invention explained the mobile telecom terminal with a scanner with

which the above-mentioned image composition approach is enforced as a mobile telecom terminal 100 with a scanner of the gestalt of operation of the 1st of this invention, it can also carry out with the mobile telecom terminal 200 with a scanner of the gestalt of operation of the 2nd of this invention. In that case, a part of processing at the step shown in the following of each above-mentioned step will be replaced by the following processings.

[0048] When judged with scan operation having been started at step S420, the image write-in section 133 writes the partial image read at step S410 at step S430 in the synthetic image memory 132 and the front frame image memory 334.

[0049] Moreover, when judged with scan operation not being completed at step S442, at step S443, the image comparator 131 compares the image memorized by the front frame image memory 334 with the image which the scanner 110 continued and was read, performs pattern matching, and computes the location which matches most as an image composition location.

[0050] If an image composition location is computed at step S443, the image write-in section 133 will write the image which the scanner 110 continued and was read in the front frame image memory 334 at step S444 while a scanner 110 compounds the image continued and read with the image memorized in the synthetic image memory 132 and writes it in the synthetic image memory 132 based on an above image composition location. After the writing of the partial image in step S444 finishes, processing returns to step S441.

[0051] As explained above, the image composition approach of the gestalt operation of the 3rd of this invention memorizes the image read with the scanner, and since it can transmit, it can attain paperless-ization while it can acquire the information on a printing lifter

simply. Moreover, even if it is the information which is hard to tell in an alphabetic character or language by transmitting to a partner's equipment by using the contents of printing as an image, the contents can be easily told to a partner. Moreover, even if it is the case where a small scanner is used, it becomes possible to acquire a wide range image.

[0052] Drawing 7 is the block diagram showing the configuration of a mobile telecom terminal with a scanner of the gestalt of operation of the 4th of this invention. The mobile telecom terminal 400 with a scanner of the gestalt of operation of the 4th of this invention forms the picture compression section 701 and the memory residue acquisition section 702 in the mobile telecom terminal 100 with a scanner of the gestalt of operation of the 1st of this invention further. In drawing 7, the number same about what carries out the same actuation as the configuration section in the mobile telecom terminal with a scanner of the gestalt of operation of the 1st of this invention is attached, and the explanation is omitted.

[0053] The image composition section 730 is constituted by the image comparator 131, the synthetic image memory 132, the image write-in section 133, the picture compression section 701, and the memory residue acquisition section 702 in drawing 7. The picture compression section 701 compresses the synthetic image memorized in the synthetic image memory 132, and the image continued and acquired with the scanner 110 with the compressibility set up beforehand.

[0054] Compressibility means the rate which reduces the size of an image here. For example, when compressing a longitudinal direction X pixel and the image of Y pixels of lengthwise directions into the size of  $1/2$ , the number of pixels is set to  $X \times Y / 4$ . By doing in this way, the amount of the synthetic image memory used decreases to a quadrant,

and the availability of the synthetic image memory 132 becomes large. Therefore, the image of one 4 times the area of this is compoundable by the same memory space. By furthermore compressing, it becomes possible to compound the range of arbitration in the image of one sheet. [0055] Moreover, it is possible not only the size of an image but to increase the availability of the synthetic image memory 132 by dropping the gradation of an image. For example, it is possible to reduce the amount of the synthetic image memory used by half by lowering the image of the gradient of 256 colors to the gradient of 16 colors. What a user chooses also in the mobile telecom terminal 400 with a scanner choosing is sufficient as these compression approaches and compressibility.

[0056] The memory residue acquisition section 702 acquires the information about the availability of the synthetic image memory 132. when there are few availabilities of the synthetic image memory 132 than predetermined memory space, the compressibility of the picture compression section 701 resets up -- having (henceforth resetting) -- it is compressed into the image of the compressibility which reset the partial image continued and read with the scanner 110, and the image memorized in the synthetic image memory 132. After this, it is compressed with the compressibility which it reset above until the memory residue of the partial image newly acquired with the above-mentioned scanner becomes less than predetermined memory space again.

[0057] In addition, although it has composition which compares the image continued and read with the image and the scanner 110 of the synthetic image memory 132 in the mobile telecom terminal 400 with a scanner of the gestalt of operation of the 4th of this invention, what is made the configuration which compares the image continued and read

with the image and the scanner 110 of a front frame which were memorized by the front frame image memory 334 like the mobile telecom terminal 200 with a scanner of the gestalt of operation of the 2nd of this invention is sufficient.

[0058] Since the means for the mobile telecom terminal with a scanner of the gestalt of operation of the 4th of this invention to compress and compound an image was established as explained above, a user can capture an image, without being conscious of the magnitude of the object scanned in case an image is captured. Moreover, since an image can be compressed and saved, while being able to save the memory for image preservation, it becomes possible to display on the display of the magnitude restricted also when a user looked at an image efficiently.

[0059] Drawing 8 is a flow chart which shows the detailed flow of the image composition processing in the image composition approach of the gestalt operation of the 5th of this invention. In addition, the flow of processing of the whole in the image composition approach of the gestalt operation of the 5th of this invention is the same as the flow of processing of the whole [ in / except for the above-mentioned image composition processing / the image composition approach of the gestalt operation of the 3rd of this invention ], and explanation of the same part is omitted. Moreover, the configuration of the equipment with which the image composition approach of the gestalt operation of the 5th of this invention is performed is the same as the configuration of the 4th of the mobile telecom terminal 400 with a scanner of the gestalt of operation of this invention shown in drawing 7 , and the explanation is omitted.

[0060] After the image write-in section 133 writes the partial image read at step S410 in the synthetic image memory 132 at step S430, processing progresses to step S441 of step S440. At step S441, a scanner 110 reads the partial image for reading continuously, as shown



in drawing 9 (a). Drawing 9 (a) is drawing in which the mobile telecom terminal 400 with a scanner while scanning the alphabetic character 901 printed as "Hello word [!!]" shows signs that the partial image of the part of "r" is read. [0061] At step S442, it judges whether scan operation ended the scanning actuation situation judging section 120, when judged with scan operation having been completed, processing progresses to step S450, and when judged with scan operation not being completed, it moves from processing to step S801. [0062] When it judges whether it is sufficient amount for the memory residue acquisition section 702 to write in the partial image which the residue of the memory space of the synthetic image memory 132 read at step S801 when judged with scan operation not being completed at step S442, and it is judged as sufficient amount, processing progresses to step S443, and when it is judged that it is not sufficient amount, it moves from processing to step S802. An example of the image 902 in the middle of the composition memorized by drawing 9 (b) in the synthetic image memory 132 and an example of the partial image 903 read at step S441 are shown.

[0063] When the residue of the memory space of the synthetic image memory 132 is judged not to be sufficient amount at step S801, the memory residue acquisition section 702 resets compressibility at step S802. At step S803, the picture compression section 701 compresses the synthetic image memorized in the synthetic image memory 132. An example of the synthetic image 904 compressed into drawing 9 (b) at step S803 is shown. After this, it is compressed with the compressibility which it reset above until the memory residue of the image newly acquired with the scanner becomes less than predetermined memory space again.

[0064] At step S804, the picture compression section 701 compresses the partial image read at step S441. An example of the partial image 905

compressed into drawing 9 (b) at step S804 is shown. At step S443, the image comparator 131 compares the image memorized in the synthetic image memory 132 with the image which the scanner 110 continued and was read, performs pattern matching, and computes the location which matches most as an image composition location. When the residue of the memory space of the synthetic image memory 132 is judged not to be sufficient amount at step S801, the synthetic image 904 and the partial image 905 which were compressed above serve as a candidate for matching.

[0065] If an image composition location is computed at step S443, at step S444, based on an above image composition location, a scanner 110 will compound the image continued and read with the image memorized in the synthetic image memory 132, and will write the image write-in section 133 in the synthetic image memory 132. When the residue of the memory space of the synthetic image memory 132 is judged not to be sufficient amount at step S801, the partial image 905 compressed above is written in the synthetic image memory 132.

[0066] After the writing of the partial image in step S444 finishes, processing returns to step S441. It is repeated until it is judged with scan operation having ended the processing from the above-mentioned step S441 to step S444 at step S442. If judged with scan operation having been completed at step S442, a display 140 will express a synthetic image as step S450.

[0067] In addition, although the gestalt of operation of the 5th of this invention explained the mobile telecom terminal with a scanner with which the above-mentioned image composition approach is enforced as a mobile telecom terminal 400 with a scanner of the gestalt of operation of the 4th of this invention, it can also carry out with the equipment of a configuration of that the front frame image memory 334 contained in the

mobile telecom terminal 200 with a scanner of the gestalt of operation of the 2nd of this invention is included further. In that case, a part of processing at the step shown in the following of each above-mentioned step will be replaced by the following processings.

[0068] When judged with scan operation having been started at step S420, the image write-in section 133 writes the partial image read at step S410 at step S430 in the synthetic image memory 132 and the front frame image memory 334.

[0069] Moreover, when judged with scan operation not being completed at step S442, at step S443, the image comparator 131 compares the image memorized by the front frame image memory 334 with the image which the scanner 110 continued and was read, performs pattern matching, and computes the location which matches most as an image composition location.

[0070] When the residue of the memory space of the synthetic image memory 132 is judged not to be sufficient amount, the picture compression section compresses the image and front frame image which were newly acquired. In that case, the image which compressed the image of the front frame memorized by the front frame image memory 334, and the partial image 905 compressed by the above serve as a candidate for matching.

[0071] If an image composition location is computed at step S443, the image write-in section 133 will write the image which the scanner 110 continued and was read in the front frame image memory 334 at step S444 while a scanner 110 compounds the image continued and read with the image memorized in the synthetic image memory 132 and writes it in the synthetic image memory 132 based on an above image composition location. After the writing of the partial image in step S444 finishes, processing returns to step S441.

[0072] Since processing for the image composition approach of the gestalt operation of the 5th of this invention to compress and compound an image was prepared as explained above, a user can capture an image, without being conscious of the magnitude of the object scanned in case an image is captured.

[0073] Drawing 10 is the block diagram showing the configuration of a mobile telecom terminal with a scanner of the gestalt of operation of the 6th of this invention. The mobile telecom terminal 600 with a scanner of the gestalt of operation of the 6th of this invention forms the compounded image preservation memory 1001 and the compounded image composition section 1002 in the mobile telecom terminal 400 with a scanner of the gestalt of operation of the 4th of this invention further. In drawing 10 , the number same about what carries out the same actuation as the configuration section in the mobile telecom terminal with a scanner of the gestalt of operation of the 4th of this invention is attached, and the explanation about the same part is omitted.

[0074] The compounded image preservation memory 1001 is the memory which can memorize two or more synthetic images generated by the image composition section 730. The compounded image composition section 1002 compounds two or more synthetic images memorized by the compounded image preservation memory 1001. For example, although two synthetic images are generated when a user performs scan operation twice, it is possible to use these two synthetic images as one image by compounding further. The image compounded in the compounded image composition section 1002 is outputted to a display 140.

[0075] in addition -- although it has composition which compares the image continued and read with the image and the scanner 110 of the synthetic image memory 132 in the mobile telecom terminal 600 with a

scanner of the gestalt of operation of the 6th of this invention -- the mobile telecom terminal 200 of the gestalt of operation of the 2nd of this invention with a scanner -- the configuration which compares the image continued and read like with the image and the scanner 110 of a front frame memorized by the front frame image memory 334 -- it may carry out .

[0076] As explained above, an image with the wide width of face of a map etc. can be compounded, and the mobile telecom terminal with a scanner of the gestalt of operation of the 6th of this invention can be read, for example, even if it is the case where a small sensor is used, since the means for compounding a compounded image again was established. Moreover, even if by transmitting such an image to others' equipment is hard to explain in an alphabetic character or language, it can tell easily against the contents.

[0077] Drawing 11 is a flow chart which shows the flow of the processing in the image composition approach of the gestalt operation of the 7th of this invention. In addition, the configuration of the equipment with which the image composition approach of the gestalt operation of the 7th of this invention is performed is the same as the configuration of the 6th of the mobile telecom terminal 600 with a scanner of the gestalt of operation of this invention shown in drawing 10 , and the explanation is omitted.

[0078] The image composition approach of the gestalt operation of the 7th of this invention adds processing at step S1110 and step S1120 to processing of the image composition approach of the gestalt of operation of the 5th of this invention. As step S440 shows to drawing 12 (a) from step S410, some printed matter 1201 is read by the 1st scan operation, and the read partial image is compounded, and it writes in the compounded image preservation memory 1001. The example in case the

above-mentioned printed matter 1201 is a map 1201 is shown in drawing 12 (a).

[0079] The image 1202 read by the 1st above-mentioned scan operation by drawing 12 (b) is shown. At step S1110, the scanning actuation situation judging section 120 judges again whether the scan operation for image reading was ended. What is judged by the other approaches is sufficient as this judgment also by scan operation termination making a user direct through the setting section which is not illustrated [ which was prepared in the mobile telecom terminal 600 with a scanner ], and judging based on the existence of those directions.

[0080] When judged with scan operation having been completed at step S1110, processing progresses to step S1120, and when judged with scan operation not being completed, processing returns to step S410. When judged with scan operation not being completed at step S1110, at step S410, by performing scan operation after the 2nd times, an image is read further, the read partial image is compounded, and it is written in the compounded image preservation memory 1001. The image 1204 read by the images 1203 and the 3rd scan operation which were read by the 2nd scan operation by drawing 12 (b) is shown.

[0081] When judged with scan operation having been completed at step S1110, the compounded image composition section 1002 compounds two or more images stored in the compounded image preservation memory 1001 at step S1120. For example, as shown in drawing 12 , at step S1120, the images 1202-1204 read by the above-mentioned scan operation are compounded, and an image 1205 is obtained.

[0082] In addition, although the gestalt of operation of the 7th of this invention explained the mobile telecom terminal with a scanner with which the above-mentioned image composition approach is enforced as a mobile telecom terminal 600 with a scanner of the gestalt of operation

of the 6th of this invention, it can also carry out with the equipment of a configuration of that the front frame image memory 334 contained in the mobile telecom terminal 200 with a scanner of the gestalt of operation of the 2nd of this invention is included further. A part of processing at the step shown in the following of each above-mentioned step will be replaced by the following processings.

[0083] When judged with scan operation having been started at step S420, the image write-in section 133 writes the partial image read at step S410 at step S430 in the synthetic image memory 132 and the front frame image memory 334.

[0084] Moreover, when judged with scan operation not being completed at step S442, at step S443, the image comparator 131 compares the image memorized by the front frame image memory 334 with the image which the scanner 110 continued and was read, performs pattern matching, and computes the location which matches most as an image composition location. When the residue of the memory space of the synthetic image memory 132 is judged not to be sufficient amount at step S801, the image of all the frames memorized by the front frame image memory 334 and the partial image 905 compressed by the above serve as a candidate for matching.

[0085] If an image composition location is computed at step S443, the image write-in section 133 will write the image which the scanner 110 continued and was read in the front frame image memory 334 at step S444 while a scanner 110 compounds the image continued and read with the image memorized in the synthetic image memory 132 and writes it in the synthetic image memory 132 based on an above image composition location.

[0086] After the writing of the partial image in step S444 finishes, processing returns to step S441. When the residue of the memory space

of the synthetic image memory 132 is judged not to be sufficient amount at step S801, while the partial image 905 compressed above is compounded with the compression image memorized in the synthetic image memory 132 and is written in the synthetic image memory 132, the partial image 905 compressed above is written in the front frame image memory 334.

[0087] As explained above, since the processing for compounding a compounded image again was prepared, even if the image composition approach of the gestalt operation of the 7th of this invention is the case where a small sensor is used, it can compound and read an image with the wide width of face of a map etc., for example. Moreover, even if by transmitting such an image to others' equipment is hard to explain in an alphabetic character or language, it can tell easily against the contents.

[0088]

[Effect of the Invention] As having explained above, this invention can transmit compressing and displaying saving the image acquired with the scanner as it is or saving, the saved image, or the acquired image and the saved image, or the acquired image, and the mobile telecom terminal with a scanner, the image composition approach, and the image composition program which can be used instead of an easy memo pad can realize.

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## DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] The block diagram showing the configuration of a mobile telecom terminal with a scanner of the gestalt of operation of the 1st of this invention

[Drawing 2] The explanatory view for explaining actuation and actuation



of a mobile telecom terminal with a scanner of the gestalt of operation of the 1st of this invention

[Drawing 3] The block diagram showing the configuration of a mobile telecom terminal with a scanner of the gestalt of operation of the 2nd of this invention

[Drawing 4] The flow chart which shows the flow of the processing in the image composition approach of the gestalt operation of the 3rd of this invention

[Drawing 5] The flow chart which shows the flow of the image composition processing in the image composition approach of the gestalt operation of the 3rd of this invention

[Drawing 6] The explanatory view for explaining image composition processing of the image composition approach of the gestalt of operation of the 3rd of this invention

[Drawing 7] The block diagram showing the configuration of a mobile telecom terminal with a scanner of the gestalt of operation of the 4th of this invention

[Drawing 8] The flow chart which shows the flow of the image composition processing in the image composition approach of the gestalt operation of the 5th of this invention

[Drawing 9] The explanatory view for explaining image composition processing of the image composition approach of the gestalt of operation of the 5th of this invention

[Drawing 10] The block diagram showing the configuration of a mobile telecom terminal with a scanner of the gestalt of operation of the 6th of this invention

[Drawing 11] The flow chart which shows the flow of the processing in the image composition approach of the gestalt operation of the 7th of this invention

[Drawing 12] The explanatory view for explaining image composition processing of the image composition approach of the gestalt of operation of the 7th of this invention

[Drawing 13] The bird's-eye view of the conventional mobile telecom terminal with a scanner

[Description of Notations]

100,200,400,600 Mobile telecom terminal with a scanner

110 202 Scanner

120 Scanning Actuation Situation Judging Section

130, 330, 730 Image composition section

131 331 Image comparator

132 332 Synthetic image memory

133 Image Write-in Section

140 Display

150 Memory

160 Image Selection Section

170 Image Transmitting Section

201 Mobile Telecom Terminal

203, 601, 901, 1201 Space

204 Display

334 Front Frame Image Memory

602 Synthetic Image to Front Frame

603 Partial Image of the Present Frame

604 Synthetic Image to the Present Frame

701 Picture Compression Section

702 Memory Residue Acquisition Section

902 Synthetic Image before Compression

903 Partial Image before Compression

904 Synthetic Image after Compression

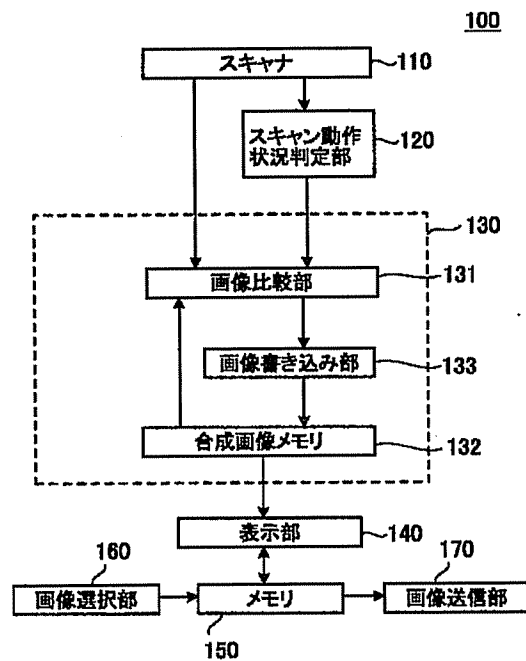
905 Partial Image after Compression  
906 Synthetic Image of Each Image after Compression  
1001 Compounded Image Preservation Memory  
1002 Compounded Image Composition Section  
1202-1204 Compounded image  
1205 Synthetic Image of Compounded Image

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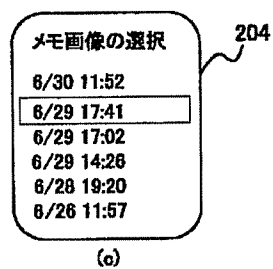
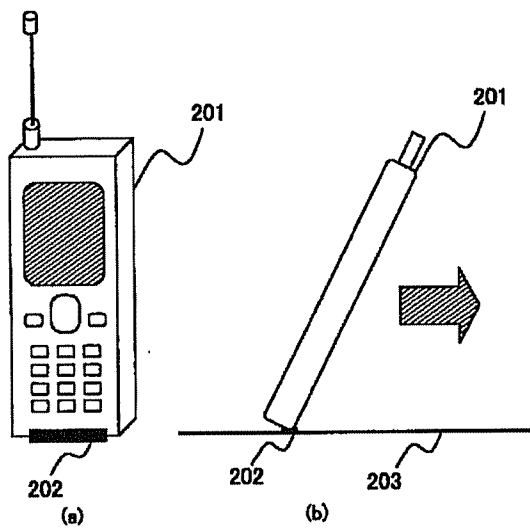
## DRAWINGS

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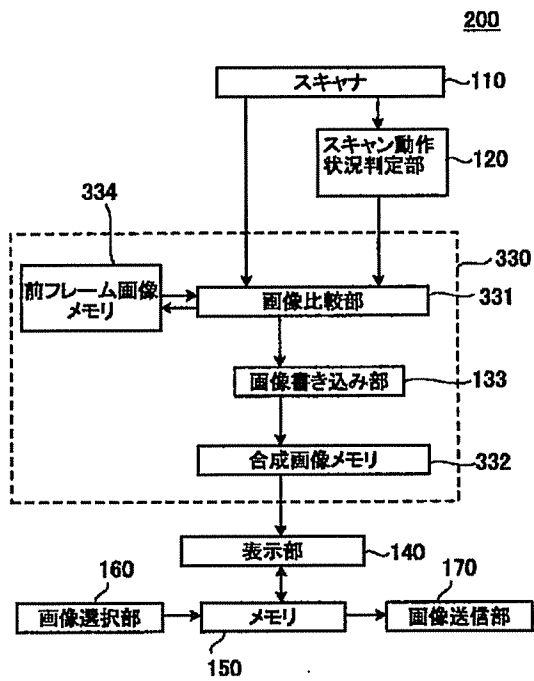
[Drawing 1]



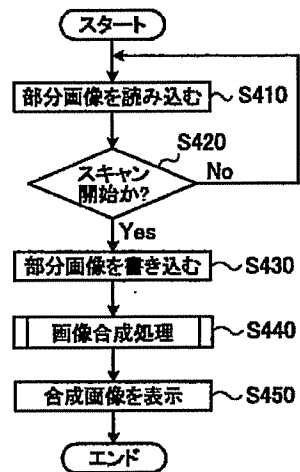
[Drawing 2]



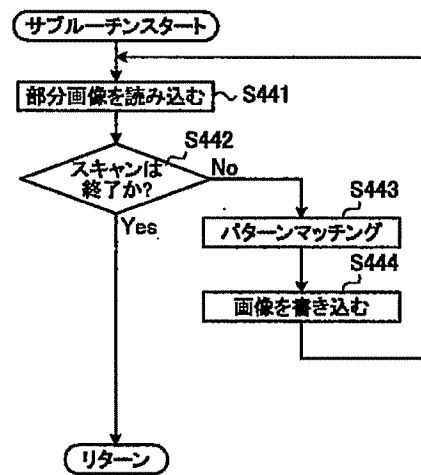
[Drawing 3]



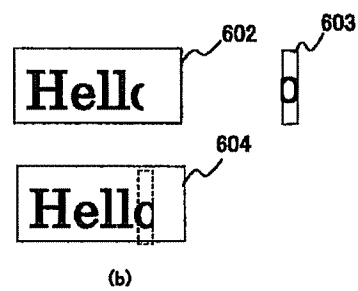
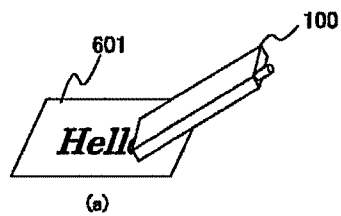
[Drawing 4]



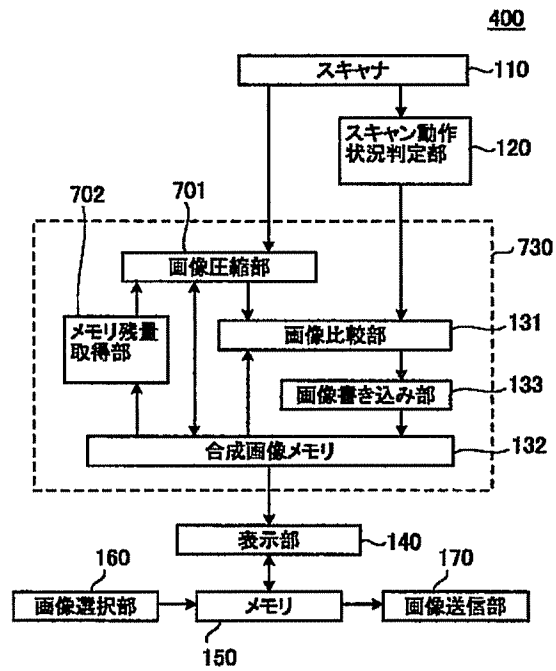
[Drawing 5]



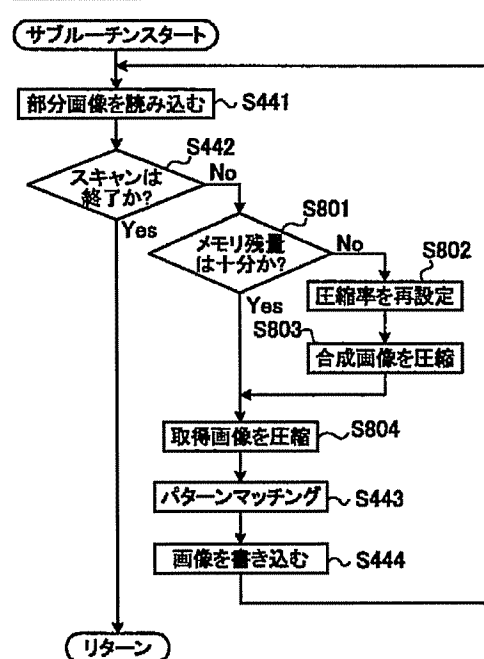
[Drawing 6]



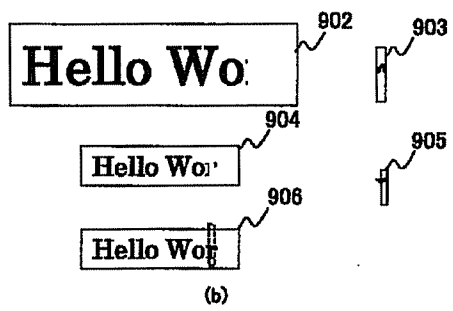
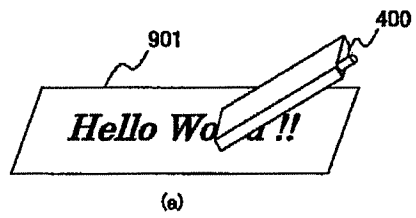
[Drawing 7]



[Drawing 8]

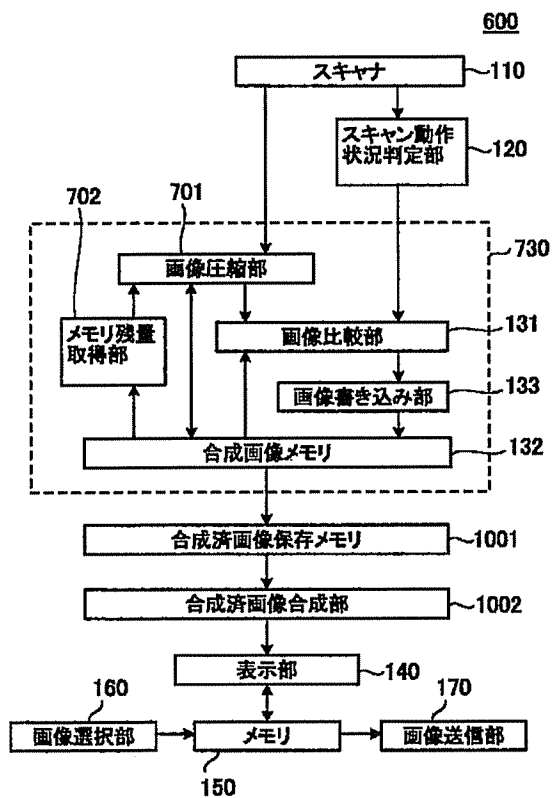


[Drawing 9]

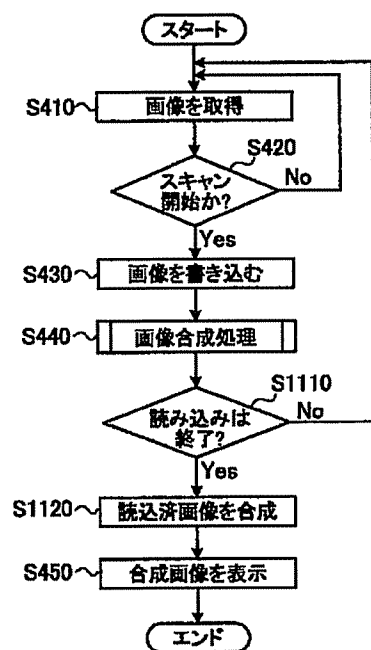


[Drawing 10]

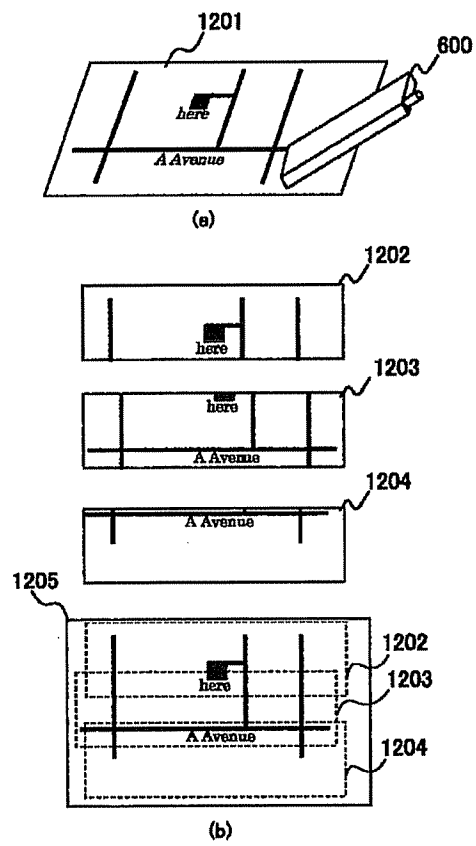




[Drawing 11]



[Drawing 12]



[Drawing 13]

